REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-38 and 65-75 are presently active; Claims 39-64 have been withdrawn from consideration. Claims 65-75 have been added by way of the present amendment. No new matter ahs been added.[1]

In the outstanding Office Action, Claims 1, 4, 17, 20, 21, 25 and 36 were rejected under 35 U.S.C. § 102(e) as being anticipated by Deschuytere et al (U.S. Pat. No. 6,515,768). Claims 22-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Deschuytere et al. Claims 2, 3, 18, 26, and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Deschuytere et al and further in view of Li et al (U.S. Pat. No. 5,822,502). Claims 5-16, 19, 27-35 and 38 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Firstly, Applicants acknowledge with appreciation the indication of allowable subject matter in Claims 5-16, 19, 27-35 and 38.

Secondly, Applicants submit that the present invention aims to generate "binary image data of high resolution from multivalued image data of low resolution" (page 6, line 25, page 7, line 2), and comprises the following (claim 1):

(i) a quantization threshold produce unit producing a plurality of quantization threshold values corresponding to each of pixels of multivalued image data according to a dither threshold matrix;

(ii) a random dither quantize unit quantizing said multivalued image data in multivalues by a random dither process using said quantization threshold values so as to output quantized data; and

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[1] Claims 65-69 correspond to Claim 7. Claims 70-75 recite a new feature, that is, the random dither process includes error diffusion calculation. Claims 70-75 are shown in Fig. 1 as an "error diffusion calculate unit 104 and supported by the specification, page 19, line 6.

(iii) a resolution convert binarize unit converting said quantized data into binary image data having a resolution higher than a resolution of said multivalued image data,

(iv) wherein said resolution convert binarize unit determines the number of dot-on pixels to be output in a plural-pixel field of said binary image data according to a value of the quantized data of a pixel being processed of said multivalued image data, the plural-pixel field corresponding to said pixel being processed, and controls the order of arranging said dot-on pixels in said plural-pixel field according to a position on said dither threshold matrix corresponding to said pixel being processed.

Deschuytere describes a frequency-modulation (that is, dot density) halftone screen. In particular, a threshold matrix is produced in the following steps. As shown in Fig. 2, the original matrix 210 (512 × 512) is divided into parcels 220 with a size of 8 × 8 screen function values. Every parcel 220 is then subdivided into subparcels 230 of 4 × 4 screen function values. The position of each 4× 4 subparcel 230 within its 8 ×8 parcel 220 is then randomly permuted. Each of the 4 × 4 subparcels 230 is then subdivided again into "sub-subparcels" 240 with a size of 2 × 2 screen function elements.... As a result, a threshold matrix in Deschuytere is generated (column 5, lines 35-48). A binary image is obtained by comparing the threshold matrix and image data using a comparable 360 (Fig. 3).

Li describes "a clustered-dot dither matrix" (seeAbstract).

The Office Action asserts on page 4, lines 2-5, that Deschuytere discloses a resolution convert binarize unit, as identified in element (iii) of the claimed invention identified above. Applicants respectfully submit that this assertion is incorrect. Deschuytere shows in Fig. 3 a coarse block 310 (memory store) and a fine block 320 (memory store), from which those with ordinary skills in the art will recognize only that the memory store 310 receives from a raster image processor 304, organized as N by M rows and columns of pixel values. Deschuytere does not disclose or suggest the conversion of resolution. Consequently, Deschuytere does not disclose or suggest element (iv) of the claimed invention identified above.

Accordingly, Applicants respectfully submit that the asserted combination of Deschuytere and Li does not produce the claimed invention.

Thus, independent Claims 1, 17, 23-25, and 36 (and the claims dependent therefrom) patentably define over Deschuytere and Li.
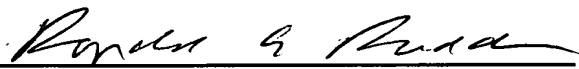
Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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